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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/498,429	02/04/2000	Mark E. Holzbach	065113.0146	8813

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EXAMINER	
POON, KING Y	
ART UNIT	**PAPER NUMBER**
2624	6

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/498,429	HOLZBACH ET AL.	
	Examiner	Art Unit	
	King Y. Poon	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 10-11, is claiming " . . . an image processing station, each having . . . ". It is unclear whether there is/are one image processing station or more than one image processing station.

Claim 1, line 4 is claiming one or more data acquisition stations; it is unclear which data acquisition station is referring to by the data acquisition station of lines 12, and 17, if there are more than one data acquisition stations. Similarly, it is unclear which data acquisition station is referring to by the data acquisition station of claims 2, 4, 10, 11, 12.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 17-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jonny Gustafsson (Internet-based support for the production of holographic stereograms, Practical Holography XII, March, 1998, pp. 169-174) in view of Kihara et al. (US 6,236,475).

Regarding claim 17: Gustafsson teaches method (all the discussion is referring to specification of the end user interface, page 171, unless stated otherwise) for producing master holographic stereograms (holograms) (line 4; note) on-demand for an individual customer, (user line 2) from customer-provided source material, (VRML file, line 4) comprising the steps of acquiring image data (image, lines 6-8) at a data acquisition station (the place where the user's computer is located), having a data acquisition processor (the processing software of the user's computer that receives image data from the VRML file, lines 3-8) that receives image data based on the source material and a customer-based preview processor (the software of the user's computer that controls the display of the hologram to the user, lines 3-9) that displays a representation of the hologram for viewing by the customer; delivering the image data to an image processing station. (Producer or printer, lines 10-11)

Gustafsson does not teach an image processor operable to generate hogel data based on image data received from the data acquisition station; and delivering the hogel data to a printing station having a spatial light modulator for receiving the hogel data from the image processor and for displaying holographic object images, and having a printer for producing a holographic stereogram.

Kihara, in the same area of printing holograms, teaches it is well known in the art that a hologram is printed by using an image processing station (control computer, fig. 6) having an image processor (inherent properties of a computer) operable to generate hogel data (signal of D5, fig. 6, column 10, lines 30-35) based on image data received from a data acquisition station (11, fig. 6); and delivering the hogel data to a printing station (printer device 13, column 10, lines 40-45) having a spatial light modulator (LCD 18, column 10, lines 40-50) for receiving the hogel data (D5 fig. 6) from the image processor and for displaying holographic object images, (column 11, lines 25-32) and having a printer (printer head, column 12, lines 45-52) for producing a holographic stereogram. (Hologram 19, column 11, lines 20-25)

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Gustafsson's system to include: an image processor, in the image processing station, operable to generate hogel data based on image data received from the data acquisition station; and delivering the hogel data to a printing station having a spatial light modulator for receiving the hogel data from the image processor and for displaying holographic object images, and having a printer for producing a holographic stereogram.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Gustafsson's system by the teaching of Kihara because of the following reasons: (a) it would have allowed Gustafsson's system to be able to print the hologram; and (b) using a well-known method of creating the hologram would have allowed users benefit from years of research and experience that has been used in producing holograms such that the hologram produced would have the highest quality with less cost.

Note: Inherently, all holograms are masters because inherently, hologram provides images and images can be converted into hologram.

Regarding claim 18: Gustafsson teaches wherein the data acquisition station is remote from the image processing station and the printing station. (Internet, page 171)

Regarding claim 19: Gustafsson does not teach wherein the image processing station also has an operator-based preview processor operable to display a representation of the hologram for viewing by an operator of the image processor.

However, Gustafsson teaches to use a computer to display a representation of the hologram for viewing by a user of the image processor.

Since a producer is a human and is controlling the producing of the hologram, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Gustafsson's system to include: wherein the image processing station (computer) also has an operator-based preview processor operable to display a representation of the

hologram for viewing by an operator of the image processor; because it would have allowed the producer to view what he is doing and help him to reduce error.

Regarding claim 20: Gustafsson teaches wherein the data acquisition station is a personal computer. (Computer, ordinary user, page 169)

Regarding claim 21: Gustafsson teaches wherein the data communication is accomplished via the Internet. (Page 171)

Regarding claim 22: Gustafsson taches wherein the data acquisition processor and the customer-based preview processor execute with programming downloaded to the personal computer. (Download VRML browser, page 171)

Regarding claim 23: Gustafsson teaches wherein the customer-based preview processor displays preview images downloaded from a server. (Object from Web page, page 170).

Regarding claim 24: Gustafsson teaches wherein the data acquisition processor receives at least input from a video source. (Animated photographs, page 169, 172)

Regarding claim 25: Gustafsson teaches wherein the data acquisition processor receives at least input from two dimensional printed material. (Photograph, page 169)

Regarding claim 26: Gustafsson teaches the step of compositing image data from different source material. (Add and remove data, page 170, e.g., the adding and removing of light sources)

Regarding claim 27: Gustafsson teaches wherein the compositing occurs at the data acquisition station. (Browser of user, page 170)

Regarding claim 28: Gustafsson teaches wherein the compositing occurs at a server site, such that the pre-view processor displays composited preview images download from the server sites.

Note: Gustafsson teaches downloaded 3D images in VRML format from other computer/server, page 170; load VRML files from computer systems or disk, page 171; and upload the composite VRML files to another computer located in the producer. Therefore, Gustafsson teaches compositing of images occurs at one computer site; and displayed the composited preview images, download from the one computer site, in another computer site.

Regarding claim 29: Gustafsson does not teach wherein the image processing station and printing station are geographically remote and in data communication.

However, Gustafsson teaches communication using Internet (page 171) and the concept of using Internet is to allow two communication parties to be remote from each other.

Since the image processing station and the printing station are two different devices communicating with each other; it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Gustafsson's system by the teaching of Internet technology and concept to include: wherein the image processing station and printing station are geographically remote and in data communication.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Gustafsson's system by the teaching of Internet technology

and concept because it would have expanded the hologram producing system of Gustafsson by allowing the image processing station to control a printing system everywhere in the world.

Regarding claim 30: Gustafsson teaches wherein the data acquisition processor delivers 2D sequence data to the image processor. (A number of plane polygonal patches, page 170)

Regarding claim 31: Gustafsson teaches wherein the data acquisition processor delivers computer generated 3D graphics data to the image processor. (VRML file, page 169, 170)

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Baba et al. (US 6,108,440) teaches a method of producing hologram.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is (703) 305-0892

November 10, 2003 King Yan Poon